AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-44. (Cancelled).

45. (Cancelled).

46. (Currently amended) The ~~cable~~ method according to Claim [[45]] 84, wherein said predetermined voltage class is not higher than 10 kV.

47. (Currently amended) The ~~cable~~ method according to Claim [[45]] 84, wherein said ~~voltage gradient is not smaller than 2.5 kV/mm and said~~ impact is of at least 50 J energy.

48. (Currently amended) The ~~cable~~ method according to Claim 47, wherein said predetermined voltage class is between 10 kV and 60 kV.

49. (Currently amended) The ~~cable~~ method according to Claim [[45]] 84, wherein said ~~voltage gradient is not smaller than 2.5 kV/mm and said~~ impact is of at least 70 J energy.

50. (Currently amended) The ~~cable~~ method according to Claim 49, wherein said predetermined voltage class is higher than 60 kV.

51. (Currently amended) The ~~cable~~ method according to Claim [[45]] 84, wherein said insulating layer thickness is at least 20% smaller than the insulating layer thickness provided for in IEC Standard 60502-2 (Ed. 1.1–1998-11) for the corresponding voltage class.

52. (Currently amended) The ~~cable~~ method according to Claim [[45]] 84, wherein said predetermined voltage class is 10KV and said insulating layer thickness is not higher than 2.5 mm.

53. (Currently amended) The ~~cable~~ method according to Claim [[45]] 84, wherein said predetermined voltage class is 20KV and said insulating layer thickness is not higher than 4 mm.

54. (Currently amended) The ~~cable~~ method according to Claim [[45]] 84, wherein said predetermined voltage class is 30KV and said insulating layer thickness is not higher than 5.5 mm.

55. (Currently amended) The ~~cable~~ method according to Claim [[45]] 84, wherein said conductor is a solid rod.

56. (Currently amended) The ~~cable~~ method according to Claim [[45]] 84, wherein the cable further ~~including~~ comprises an electric shield surrounding said insulating layer, said electric shield comprising a metal sheet shaped in tubular form.

57. (Currently amended) The ~~cable~~ method according to Claim [[45]] 84, wherein said insulating layer thickness is selected so that the electrical stress within the insulating layer when the cable is operated at a ~~nominal~~ voltage corresponding to said predetermined voltage class ranges among values between 2.5 and 18 kV/mm.

58. (Currently amended) The ~~cable~~ method according to Claim [[45]] 84, wherein said protective element is placed in a position radially external to said insulating layer.

59. (Currently amended) The ~~cable~~ method according to Claim [[45]] 84, wherein the degree of expansion of said expanded polymeric layer is between 0.35 and 0.7.

60. (Currently amended) The ~~cable~~ method according to Claim 59, wherein said degree of expansion is between 0.4 and 0.6.

61. (Currently amended) The ~~cable~~ method according to Claim [[45]] 84, wherein said expanded polymeric layer has a thickness between 1 and 5 mm.

62. (Currently amended) The ~~cable~~ method according to Claim [[45]] 84, wherein [[the]] an expandable polymeric material of said expanded polymeric layer is selected from polyolefin polymers or copolymers based on ethylene and/or propylene.

63. (Currently amended) The ~~cable~~ method according to Claim 62, wherein said expanded polymeric material is selected from:

a) ethylene copolymers with an ethylenically unsaturated ester in which the quantity of unsaturated ester is between 5% and 80% by weight,

b) elastomeric copolymers of ethylene with at least one C_3-C_{12} α-olefin, and optionally a diene, having the following composition: 35%-90% as moles of ethylene, 10%-65% as moles of α-olefin, 0%-10% as moles of diene,

c) copolymers of ethylene with at least one C_4-C_{12} α-olefin, and optionally a diene, having a density between 0.86 and 0.90 g/cm^3, or

d) polypropylene modified with ethylene/C_3-C_{12} α-olefin copolymers where the ratio by weight between polypropylene and the ethylene/C_3-C_{12} α-olefin copolymer is between 90/10 and 30/70.

64. (Currently amended) The cable according to Claim [[45]] 84, wherein said protective element further includes at least one non-expanded polymeric layer coupled with said expanded polymeric layer.

65. (Currently amended) The ~~cable~~ method according to Claim 64, wherein said ~~at least one~~ non-expanded polymeric layer has a thickness in the range of 0.2 to 1 mm.

66. (Currently amended) The ~~cable~~ method according to Claim 64, wherein said ~~at least one~~ non-expanded polymeric layer is made of polyolefin material.

67. (Currently amended) The ~~cable~~ method according to Claim 64, wherein said ~~protective element comprises a first~~ non-expanded polymeric layer is in a position radially external to said expanded polymeric layer.

68. (Currently amended) The ~~cable~~ method according to Claim [[66]] 67, wherein said protective element comprises a second non-expanded polymeric layer in a position radially internal to said expanded polymeric layer.

69. (Currently amended) The ~~cable~~ method according to Claim [[45]] 84, comprising a further expanded polymeric layer in a position radially internal to said protective element.

70. (Currently amended) The ~~cable~~ method according to Claim 69, wherein said further expanded polymeric layer is in a position radially external to said insulating layer.

71. (Currently amended) The ~~cable~~ method according to Claim 69, wherein said further expanded polymeric layer is semiconductive.

72. (Currently amended) The ~~cable~~ method according to Claim 69, wherein said further expanded polymeric layer is water swellable.

73. (Currently amended) The ~~cable~~ method according to Claim [[45]] 84, wherein said conductor is a metal rod.

74. (Currently amended) The ~~cable~~ method according to Claim [[45]] 84, wherein said insulating layer is made of a non-crosslinked base polymeric material.

75. (Currently amended) The ~~cable~~ method according to Claim [[45]] 84, wherein said predetermined voltage class belongs to a medium or high voltage range.

76. (Currently amended) ~~A cable for use in a predetermined voltage class, comprising:~~ The method according to Claim 84, wherein

~~a conductor;~~

~~an insulating layer surrounding said conductor; and~~

~~a protective element around said insulating layer comprising at least one expanded polymeric layer,~~ the protective element thickness ~~having~~ has a value smaller than 7.5 mm for a conductor cross-sectional area greater than 50 mm^2 and a value greater than 8.5 mm for a conductor cross-sectional area smaller than or equal to 50 mm^2.

77. (Currently amended) The ~~cable~~ method according to Claim [[76]] 84, wherein said predetermined voltage class is higher than 60 kV and said ~~insulating layer is not detectably damaged upon~~ impact ~~of an energy of~~ is at least 70 J.

78. (Currently amended) The ~~cable~~ method according to Claim [[76]] 84, wherein said predetermined voltage class is not higher than 60 kV and said ~~insulating layer is not detectably damaged upon~~ impact ~~of an energy of~~ is at least 50 J.

79. (Currently amended) The ~~cable~~ method according to Claim [[76]] 84, wherein said predetermined voltage class is not higher than 10 kV and said ~~insulating layer is not detectably damaged upon~~ impact ~~of an energy of~~ is at least 25 J.

80. (Cancelled).

81. (Cancelled).

82. (Cancelled).

83. (Currently amended) The ~~group of cables~~ method according to Claim [[81]] 84, wherein said expanded polymeric layer has constant thickness ~~and said at least one non-expanded polymeric layer increases in thickness in inverse relationship with the conductor cross-sectional area~~.

84. (Currently amended) A method for designing a cable comprising a conductor, an insulating layer surrounding said conductor and a protective element surrounding said conductor, said protective element including at least one polymeric expanded layer, comprising the steps of:

selecting a conductor cross-sectional area;

determining ~~the~~ a thickness for said insulating layer compatible with safe operation in a predetermined voltage class on said selected conductor cross-sectional area ~~in correspondence of~~ based on one of a ~~number~~ plurality of predetermined electrical limit conditions and being smaller than the insulating layer thickness provided for in IEC Standard 60502-2 (Ed. 1.1–1998-11) for the corresponding voltage class;

said insulating layer thickness being such as to provide a voltage gradient on the outer surface of the insulating layer not smaller than 1.0 kV/mm;

~~selecting the maximum insulating layer thickness among those determined in said number of predetermined electrical limit conditions;~~

determining a thickness of said protective element so that said insulating layer is not detectably damaged upon an impact on the cable by an energy of at least ~~50~~ 25 J; and

using said selected insulating layer and said determined protective element thickness in the design of [[a]] the cable for said

predetermined voltage class and selected conductor cross-sectional area.

85. (Previously presented) The method according to Claim 84, wherein said step of determining a thickness of said protective element comprises the step of determining a thickness of said expanded polymeric layer.

86. (Previously presented) The method according to Claim 84, wherein said step of determining a thickness of said protective element comprises the step of selecting a thickness of said expanded polymeric layer and determining a thickness of at least one non-expanded polymeric layer associated with said expanded polymeric layer, said protective element comprising said at least one non-expanded polymeric layer.

87. (Previously presented) The method according to Claim 86, wherein said step of determining a thickness of at least one non-expanded polymeric layer comprises the step of correlating in inverse relationship the thickness of said at least one non-expanded polymeric layer with the conductor cross-sectional area.

88. (Previously presented) The method according to Claim 86, wherein said predetermined electrical limit conditions include the electric gradient at the outer surface of the insulating layer.